ii. silane or chlorosilane functionalizing agents, and

iii. aluminum components selected from an alumoxane or an aluminum compound of the formula $AlR^1_{x'}R^2_{y'}$, wherein R^1 independently each occurrence is hydride or R, R^2 is hydride, R or OR, wherein R is a C_1 to C_{10} hydrocarbyl group, x' is 2 or 3, y' is 0 or 1 and the sum of x' and y' is 3,

to form a support precursor having a specified pore volume,

C. applying to the support precursor a first solution in a compatible solvent of one of the following:

(1) a complex of a metal of Group 3, 4, or the Lanthanide metals of the Periodic Table of the Elements or

(2) a cocatalyst selected from the group consisting of non-polymeric, non-oligomeric complexes capable of activating the complex of (C)(1) for the polymerization of α-olefins

and optionally removing the compatible solvent of the first solution to form a supported procatalyst;

D. applying to the supported procatalyst a second solution in a compatible solvent of the other of the complex or the cocatalyst of (C) to form a supported catalyst, wherein the second solution is provided in an amount such that 100 percent of the pore volume of the support precursor is not exceeded; and

E. optionally removing the compatible solvent of the second solution from the supported catalyst to form a recovered supported olefin polymerization

A1

catalyst.

5. (Amended) The process of Claim 1, wherein the complex is $L_lMX_mX'_nX''_p$, or a dimer thereof wherein:

L is an anionic, delocalized, π-bonded group that is bound to M, containing up to 50 [nonhydrogen] non-hydrogen atoms, optionally two L groups may be joined together through one or more substituents thereby forming a bridged structure, and further optionally one L may be bound to X through one or more substituents of L;

A2

M is a metal of Group 4 of the Periodic Table of the Elements in the +2, +3 or +4 formal oxidation state;

X is an optional, divalent substituent of up to 50 non-hydrogen atoms that together with L forms a metallocycle with M;

X' is an optional neutral Lewis base having up to 20 non-hydrogen atoms;

X" each occurrence is a monovalent, anionic moiety having up to 40 non-hydrogen atoms, optionally, two X" groups may be covalently bound together forming a divalent dianionic moiety having both valences bound to M, or form a neutral, conjugated or nonconjugated diene that is π-bonded to M (whereupon M is in the +2 oxidation state), or further optionally one or more X" and one or more X' groups may be bonded together thereby forming a moiety that is both covalently bound to M and coordinated thereto by means of Lewis base functionality;

l is 1 or 2;

m is 0 or 1;

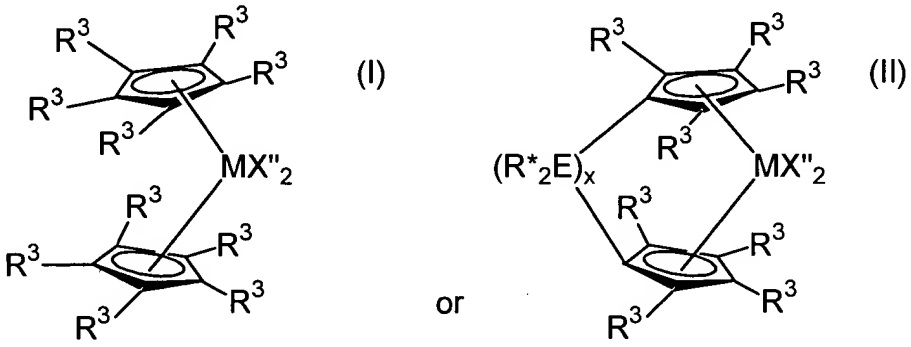
n is a number from 0 to 3;

p is an integer from 0 to 3; and

the sum, l+m+p, is equal to the formal oxidation state of M.

6. (Amended) The process of Claim 5, wherein the complex contains two L groups which are linked by a bridging group, wherein the bridging group corresponds to the formula $(ER^*_2)_x$, wherein E is silicon or carbon, R* independently each occurrence is hydrogen or a group selected from silyl, hydrocarbyl, hydrocarbyloxy and combinations thereof, said R* having up to 30 carbon or silicon atoms, and x is 1 to 8.

7. (Amended) The process of Claim 5, wherein the complex corresponds to the formula:



wherein:

M is titanium, zirconium or hafnium, in the +2 or +4 formal oxidation state;

R^3 in each occurrence independently is selected from the group consisting of hydrogen, hydrocarbyl, silyl, germyl, cyano, halo and combinations thereof, or adjacent R^3 groups together form a hydrocarbadiyl, siladiyl or germadiyl group thereby forming a

fused ring system,

X" independently each occurrence is an anionic ligand group of up to 40 [nonhydrogen] non-hydrogen atoms, or two X" groups together form a divalent anionic ligand group of up to 40 [nonhydrogen] non-hydrogen atoms or together are a conjugated diene having from 4 to 30 non-hydrogen atoms forming a π-complex with M, whereupon M is in the +2 formal oxidation state,

E is silicon or carbon,

R* independently each occurrence is hydrogen or a group selected from silyl, hydrocarbyl, hydrocarbyloxy and combinations thereof, said R* having up to 30 carbon or silicon atoms, and

x is 1 to 8.

a2

8. (Amended) The process of Claim 1, wherein the complex corresponds to the formula:

$L_lMX_mX'_nX''_p$, or a dimer thereof

wherein:

L is an anionic, delocalized, π-bonded group that is bound to M, containing up to 50 [nonhydrogen] non-hydrogen atoms;

M is a metal of Group 4 of the Periodic Table of the Elements in the +2, +3 or +4 formal oxidation state;

X is a divalent substituent of up to 50 non-hydrogen atoms that together with L forms a metallocycle with M;

X' is an optional neutral Lewis base ligand having up to 20 non-hydrogen atoms;

X" each occurrence is a monovalent, anionic moiety having up to 20 non-hydrogen atoms, optionally two X" groups together may form a divalent anionic moiety having both valences bound to M or a neutral C_{5-30} conjugated diene, and further optionally X' and X" may be bonded together thereby forming a moiety that is both covalently bound to M and coordinated thereto by means of Lewis base functionality;

l is 1 or 2;

m is 1;

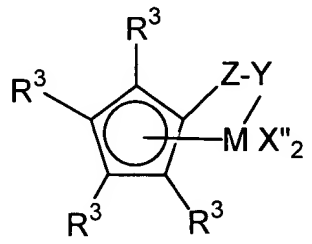
n is a number from 0 to 3;

p is an integer from 1 to 2; and

the sum, l+m+p, is equal to the formal oxidation state of M.

a2

9. (Amended) The process of Claim 8, wherein the complex corresponds to the formula:



wherein:

M is titanium or zirconium in the +2 or +4 formal oxidation state;

R^3 in each occurrence independently is selected from the group consisting of hydrogen, hydrocarbyl, silyl, germyl, cyano, halo and combinations thereof, or adjacent R^3 groups together form a hydrocarbadiyl, siladiyl or germadiyl group thereby forming a fused ring system,

each X" is a halo, hydrocarbyl, hydrocarbyloxy or silyl group, said group having up to 20 non-hydrogen atoms, or two X" groups together form a C_{5-30} conjugated diene;

Y is -O-, -S-, -NR*-, -PR*-; and

a2

Z is SiR^*_2, CR^*_2, $SiR^*_2SiR^*_2$, $CR^*_2CR^*_2$, $CR^*=CR^*$, $CR^*_2SiR^*_2$, or GeR^*_2, wherein: R* independently each occurrence is hydrogen or a group selected from silyl, hydrocarbyl, hydrocarbyloxy and combinations thereof, said R* having up to 30 carbon or silicon atoms.

18. (Amended) The process of Claim 1, wherein at least one of the supported procatalyst or the supported catalyst is treated by at least one of the following:

a. applying thereto a vacuum of from 0.05 to 150 Torr; or

b. heating to a temperature of up to 60°C.

a3

19. (Amended) A process for polymerizing at least one α-olefin monomer comprising:

A. preparing a supported catalyst by:

i. calcining silica at a temperature of 30 to 1000°C to form calcined silica,

ii. reacting the calcined silica with an agent selected from the group consisting of:

(a) Lewis acid alkylating agents,

(b) silane or chlorosilane functionalizing agents, and

(c) aluminum components selected from an alumoxane or

an aluminum compound of the formula $AlR^1_{x'}R^2_{y'}$, wherein R^1 independently each occurrence is hydride or R, R^2 is hydride, R or OR, wherein R is a C_1 to C_{10} hydrocarbyl group, x' is 2 or 3, y' is 0 or 1 and the sum of x' and y' is 3,

to form a support precursor having a specified pore volume,

iii. applying to the support precursor a first solution in a compatible solvent of one of the following:

(a) a complex of a metal of Group 3, 4, or the Lanthanide metals of the Periodic Table of the Elements or

(b) a cocatalyst selected from the group consisting of non-polymeric, non-oligomeric complexes capable of activating the complex of (iii)(a) for the polymerization of α-olefins

and optionally removing the compatible solvent of the first solution to form a supported procatalyst;

iv. applying to the recovered supported procatalyst a second solution in a compatible solvent of the other of the complex or cocatalyst of (iii) to form a supported catalyst, wherein the second solution is provided in an amount such that 100 percent of the pore volume of the support precursor is not exceeded; and

v. optionally removing the compatible solvent of the second solution from the supported catalyst to form a recovered supported catalyst;